



Pre-Inspection Checklist for Potable Water Heaters-HLW

<http://www.lni.wa.gov/TradesLicensing/Boilers>

Notice: **This checklist reflects the most common violations our field inspectors encounter when performing an inspection on a hot water heating boiler installation. It's suggested that boiler industry personnel have access to a current set of applicable codebooks/jurisdictional laws. Such as: Section IV of the ASME Boiler Code; The National Board Inspection Code (NBIC); Chapter [296-104 WAC](#), and [Chapter 70.79 RCW](#) of the Washington State Boiler and Unfired Pressure Vessel Laws.**

REFERENCE

COMPLIANCE

Yes No

Administration and General Requirements

[WAC 296-104-010](#)

A potable water heater (ASME HLW stamped) is considered a boiler when it supplies potable hot water for commercial purposes at pressures not exceeding 160 PSI and temperatures not exceeding 210°F except that water heaters are exempted when none of the following limitations is exceeded:

- (1) Heat input of 200,000 Btu/hr
- (2) Water temperature of 210°F
- (3) Nominal water-containing capacity of 120 gallons

[RCW 18.27](#) and
[18.106](#)

Every contractor shall be registered with the Department of Labor and Industries before installing/reinstalling, making repairs, or modifications to any boiler.

[WAC 296-104-020](#)

Every contractor shall apply for and obtain a permit from the boiler section prior to making the installation/reinstallation of any boiler.

[WAC 296-104-255](#),
[260](#), [265](#), and [271](#)

A minimum clear space of eighteen inches (18") shall be provided all sides of the boiler. As a minimum all other sides shall comply with the boiler manufacturer's installation instructions for clearances to combustible materials.

[RCW 70.79.320](#)

The owner or user of any boiler required to be inspected upon installation/reinstallation shall not operate the boiler until a certificate-inspection has been made.

[WAC 296-104-200](#)

All low-pressure boilers shall be constructed, stamped, and installed in accordance with Section IV of the ASME code.

REFERENCE

COMPLIANCE

Yes No

Controls

Section IV HLW-701

Each individual automatically fired water heater, in addition to the operating control used for normal water heater operation shall have a separate high temperature limit actuated combustion control that will automatically cut off the fuel supply. The temperature range of the of the high temperature limit control shall not allow a setting over 210°F.

Installation Requirements

Section IV HLW-800

Each water heater shall have at least one officially rated temperature and pressure safety relief valve or at least one officially rated safety relief valve.

Section IV HLW-800

No safety relief valve shall be smaller than NPS 3/4 inch.

Section IV HLW-800

The safety relief valve pressure setting shall be less than or equal to the maximum allowable working pressure of the water heater.

Section IV HLW-800

The required relieving capacity in Btu/hr of the safety relief valve shall not be less than the maximum allowable input.

Section IV HLW-801

Safety relief valves shall be connected to the top of water heaters or directly to a tapped or flanged opening in the water heater.

Section IV HLW-801

Safety relief valves shall be installed with their spindles upright and vertical with no horizontal connecting pipe, except that, when the safety relief valve is mounted directly on the water heater vessel with no more than 4 inch maximum interconnecting piping, the valve may be installed in the horizontal position with the outlet pointed down.

Section IV HLW-801

No piping or fitting used to mount the safety relief valve shall be of a nominal pipe size less than that of the valve inlet.

Section IV HLW-801

Safety relief valves shall not be connected to an internal pipe in the water heater or a cold water feed line connected to the water heater.

Section IV HLW-801

No shutoff of any description shall be placed between the safety relief valve and the water heater, or on the discharge pipes between such valves and the atmosphere.

Section IV HLW-801

When a discharge pipe is used, its internal cross-sectional area shall be not less than the full area of the valve outlet.

REFERENCE

COMPLIANCE

Yes No

Installation Requirements (Continued)

Section IV HLW-801	The discharge from safety relief valves shall be so arranged that there will be no danger of scalding attendants.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-801	The safety relief valve discharge shall be as short and straight as possible and so arranged as to avoid undue stress on the valve.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-805	Water supply shall be introduced into a water heater through an independent water supply connection.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-805	Feedwater shall not be introduced through openings or connections provided for cleaning, safety relief valves, drain, or temperature gage.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-809	Provisions shall be made for the expansion and contraction of hot water mains connected to water heaters by providing substantial anchorage at suitable points and by providing swing joints when water heaters are installed in batteries.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-810	Each water heater shall have a bottom drain pipe connection fitted with a valve or cock connected to the lowest water space practicable. The minimum size bottom drain valve shall be ¾ inch.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-810	Any discharge piping connected to the bottom drain connection shall be full size to the point of discharge.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-820	Each installed water heater shall have a thermometer so located and connected that it shall be easily readable.	<input type="checkbox"/>	<input type="checkbox"/>
Section IV HLW-820	The thermometer shall be so located that it shall at all times indicate the temperature of the water in the water heater at or near the outlet.	<input type="checkbox"/>	<input type="checkbox"/>

Note: Make certain that all items listed above are in compliance prior to requesting an inspection on a new or reinstalled boiler.